Flight

Advanced Strike OCF-04X

Mission

Explore Out of Control and Advanced Handling Flight Characteristics

OCF-4X

ORM

- **Operational Requirements / Limitations**
  - **Crew Rest / Crew Day / Work Week**
  - **R&I**
  - **IP Currency (SOP)**
  - **Warm Up Eligibility**
  - **Previous Flight Incomplete? Determine Graded Items.**
  - **On-Wing Required?**
- **Human Factors**
  - **Life Stressors / External Factors / Personal Problems**
  - **Medical Status (Rest / Nourishment / Hydration)**
- **Hazards and Controls**
  - **Routine**
  - **Weather**
    - **Current Observations and Forecasts**
    - **Crosswinds**
    - **Fuel Considerations**
  - **Mission Specific**

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Admin (Mission Card)

- **ATC C/S - Evt**
- **A/C - Crew**
- **Walk - Takeoff - Land Times**
- **Area**
- **Line / T/O / Abort / RPM**
- **Comm Plan – Pri / Aux**
- **Nav Plan**
- **Joker / RTB**

ADMIN

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- **Launch**
  - **Weather**
  - **Preflight / Start / Taxi**
  - **T/O**
  - **Transit**
  - **RadAlt Usage**
- **RTB**
  - **Recovery**
  - **Diverts**
  - **NOTAMs**

Flight Brief

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- **Brief:**
  - QOD (NATOPS / EP / SOP)
  - Departure/ Recovery procedures
  - Spin recovery procedures
  - Lateral stick adverse yaw departure procedures
  - Runaway trim
  - Engine flameout
  - Ejection situations
  - Minimum turn radius
  - T-45 performance characteristics
  - NATOPS chapter II

Conduct

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- **Introduce**
  - **Acceleration checks:**
    - **1 g straight/level**
    - **Unloaded acceleration (Check AOA)**
  - **Extension/pitchback maneuver**
  - **Timed turns (Min radius):**
    - **14 units AOA**
    - **17 units AOA**
    - **18-21 units AOA**
    - **Other 1 v 0 maneuvers as briefed.**

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Conduct

- **Review**
  - **High AOA/ deep stall investigation/ rudder-induced departure**
  - **Low airspeed recovery (70 degrees noseup)**
  - **Low airspeed recovery (110 degrees noseup)**
  - **Lateral stick adverse yaw departure**
  - **Precautionary approach**
  - **Crosswind landing (conditions permitting)**
  - **Landing(s)**

Notes

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- **“Headwork” and “Procedures” are the only graded items.**
- **OCF-04X must be flown within 2 weeks prior to ACM-01**

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Departure / Spin Procedures

What Are They?

Departure / Spin Procedures

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- **WHY**
  - **Controls- Neutralize (forcibly center rudder pedals)**
    - **Take out input that caused you to depart, provide smooth airflow over the airframe, prevent rudder blow out**
  - **Speed brakes – Retract**
    - **Provide smooth airflow over the stabs, decrease chance of yaw**
  - **Throttle – Idle**
    - **Best compressor stall margin**
  - **Check altitude, AOA, airspeed, and turn needle**
    - **Altitude is like stopwatch for time remaining; AOA (is it pegged at 0 or 28 and above) if not, you are not yet in a spin; airspeed (fairly steady below 160 for steady state spin) need 150 or greater before recovering; turn needle (only reliable indication of direction of spin). Continue updating instruments over the ICS throughout the recovery (Think CRM)**

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Departure / Spin Procedures

- **WHY (cont)**
  - ***If spin confirmed:***
  - **INVERTED (AOA pegged at 0 units)**
    - **Rudder pedal – Full opposite turn needle**
      - **Want to stop the yaw rate**
    - **Lateral stick – Full opposite turn needle**
    - **Longitudinal stick – Neutralize**
      - **Stick movements based on engineering data and test pilots, hit the "I believe" button**
  - **UPRIGHT (AOA above 28 units)**
    - **Rudder pedal – Full opposite turn needle**
      - **Want to stop the yaw rate**
    - **Lateral stick – Full with turn needle**
    - **Longitudinal stick – Neutralize**
      - **Stick movements based on engineering data and test pilots, Hit the "I believe" button**

Departure / Spin Procedures

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- **WHY (cont)**
  - ***If recovery indicated (recovering AOA, reducing roll and yaw, increasing airspeed) or airspeed increasing through 160 KIAS***
    - **Lateral Stick – Neutralize**
      - **Above 160 kias, the anti-spin input of the stick starts to become pro-spin and will try to drive you deeper into a spin**
  - ***When recovery indicated***
    - **Rudder – Smoothly center rudder pedals**
      - **Want to slowly take out pedal force as the yaw rate decreases. NO SUDDEN MOVES AT SLOW SPEED / HIGH AOA!**
  - ***If out of control passing through 10,000 ft AGL***
    - **EJECT!**
      - **If no signs of recovery by this time, you will not have sufficient altitude to quit spinning and pull up.**

Spin Modes

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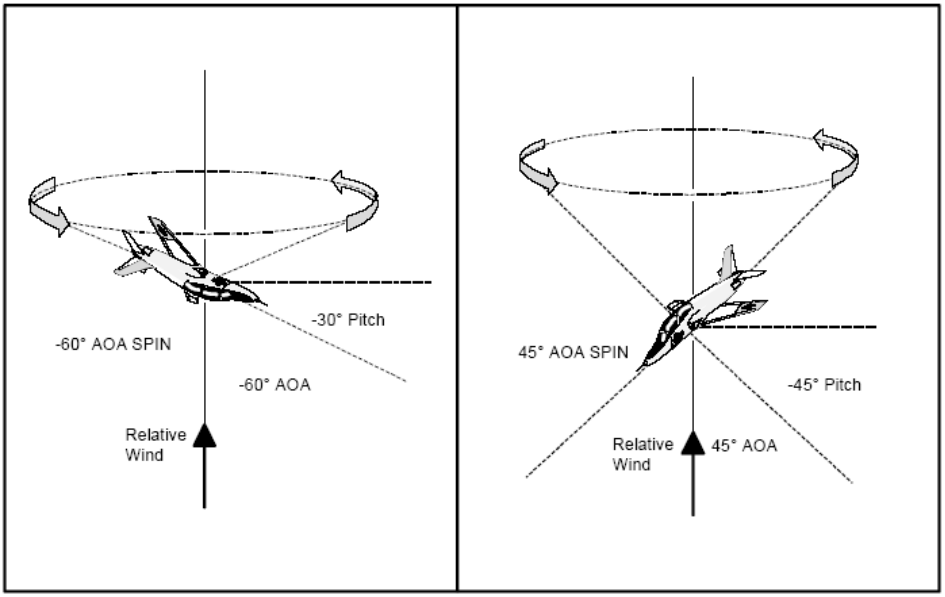

INVERTED	AIRSPEED (KIAS)	ALTITUDE LOSS (FT./TURN)	SPIN RATE (SECONDS/TURN)
-60° AOA	50 - 120	1,000	3 - 4
-40° AOA	100 - 160	1,000	3 - 4
-25° AOA	140 - 200	1,700	3 - 4

UPRIGHT	AIRSPEED (KIAS)	ALTITUDE LOSS (FT./TURN)	SPIN RATE (SECONDS/TURN)
30° AOA	INCREASE 10/TURN	1,250	6
45° AOA	100 - 110	1,000	4

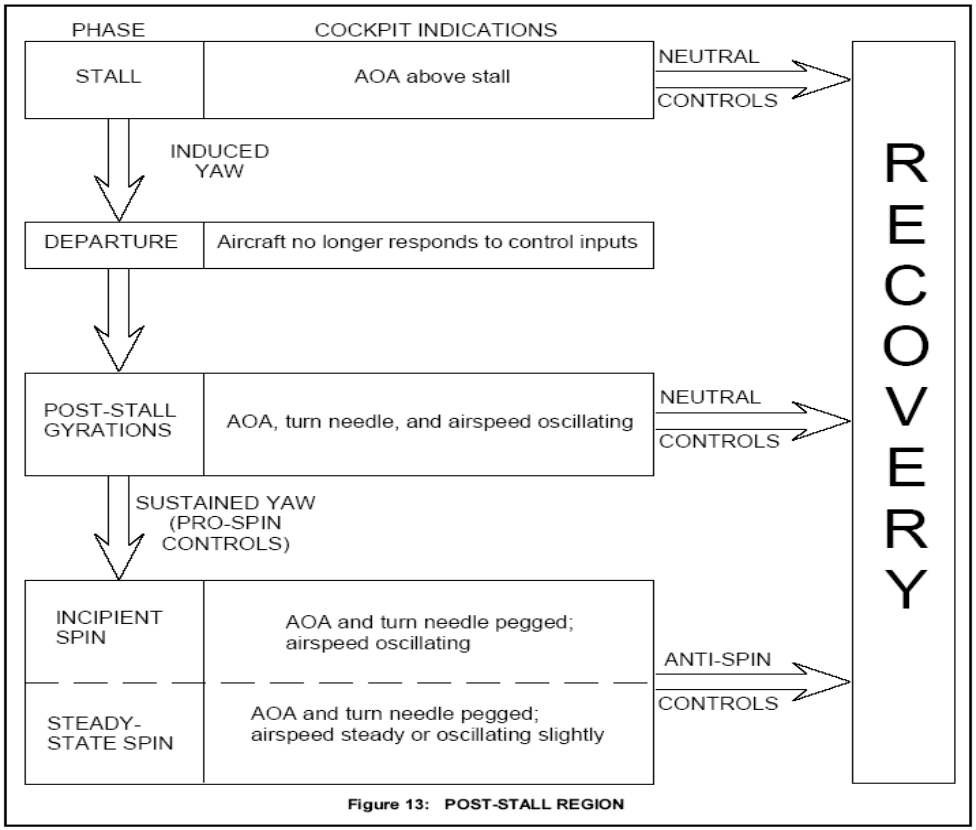

Figure 13: POST-STALL REGION

OCF Checklist

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- **On the way to the area, complete the OCF departure checklist**
  - **Departure checklist**
    1. **Stall/aero checklist – complete**
    2. **Lap belts – tighten**
    3. **Helmet visor – tighten down**
    4. **Rudder pedals – adjust aft for full throw**
    5. **Shoulder harness – locked**
    6. **Landing gear, flaps / slats – up, speed brakes – retracted**
    7. **BATT switches – on**
    8. **CONTR AUG - SBI**
    9. **Turn needle, airspeed, AOA – check operation**
    10. **ICS – hot mic**
    11. **Throttle friction – set**
- **Stall / aero checklist will be reviewed complete before the start of all subsequent maneuvers**

70 / 110 Deg Nose High

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- **70 Degree nose high departure**
  - **14k / 300 KIAS**
    - **Pull 15-17 units to 70 deg nose high**
    - **At 150kts, throttle to idle**
    - **Start the recovery when unable to maintain 70deg nose high**
    - **Will take approximately 8,000 ft to recover**

- **110 Degree nose high departure**
  - **14k / 350 KIAS**
    - **Pull 15–17 units through pure vertical to arrive at 110 deg nose high**
    - **At 150 kts, throttle to idle**
    - **Start the recovery when unable to maintain 110deg nose high**
    - **Will take approximately 8,000 ft to recover**
    - **May see Oil Pres light, Fuel Pres light, or Low Fuel light; should go out with positive G on the aircraft**

High AOA / Deep Stall

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- **Altitude above 20,000ft; Throttle to idle**
  - **Slow to 24-26 units**
    - **Will initially be stable, then start getting wing rock. Use the rudder vice lateral stick to fight the rolling of the aircraft. As the aircraft slows, you will get into pitch-buck. If you hold the pull, you will notice the nose position continue to drop and the airspeed continue to increase. If you want to bring the nose up, ease the pull and reset to 21 units.**
  - **Pull for 28-30 units**
    - **Use the rudder to keep you upright, at anytime throughout the entire high AOA maneuver you hit 90 deg AOB, consider that the departure point and recover.**

Lateral Stick Adverse Yaw

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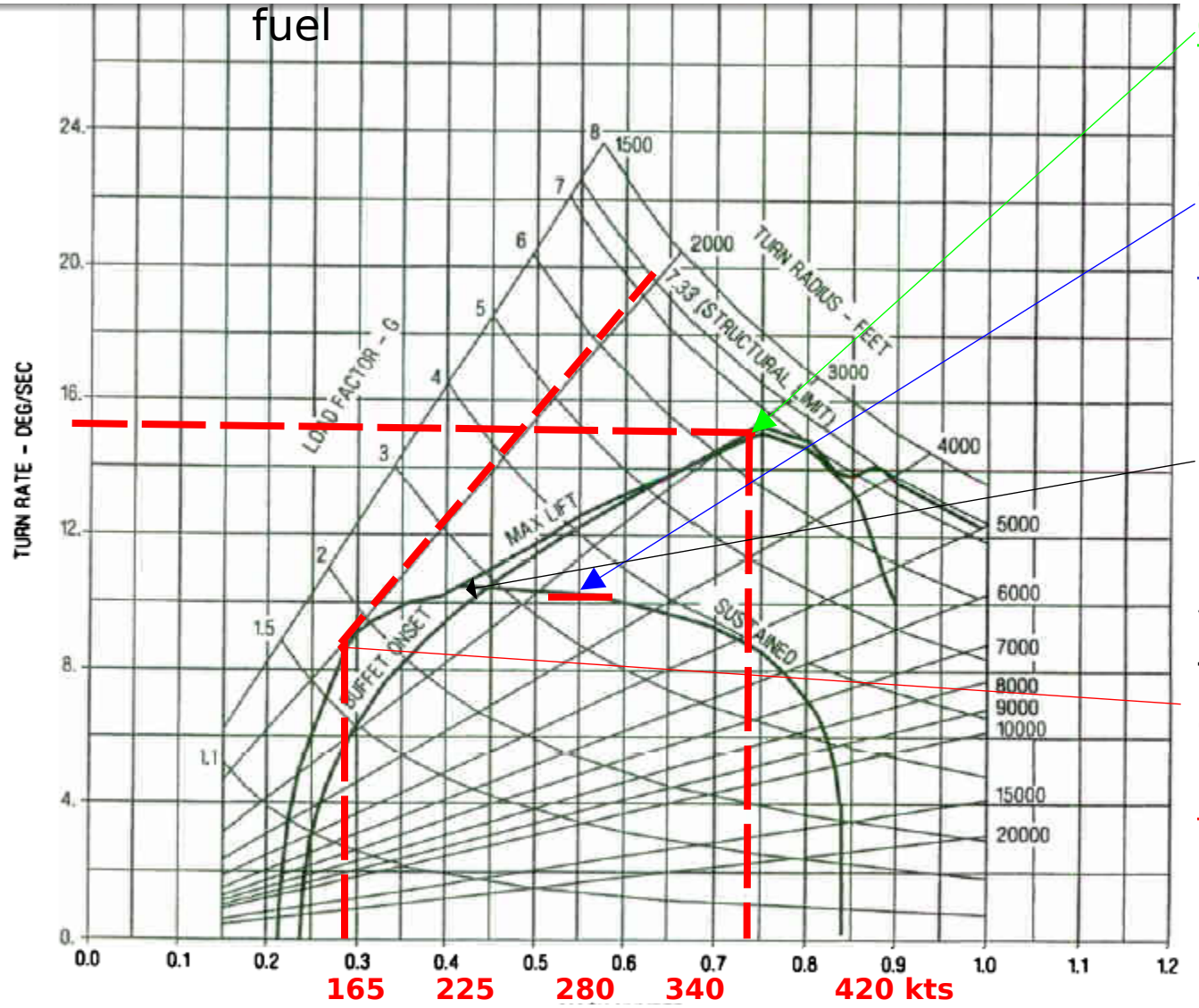
- **1. AIRSPEED 275 KIAS**
- **2. 15º NOSE UP**
- **3. 80 - 90º AOB**
- **4. PWR IDLE**
- **5. AT 250 KIAS, PULL FULL AFT STICK 28-30 UNITS AOA**
- **6. REVERSE DIRECTION WITH FULL OPPOSITE AILERON AND**
  MAINTAIN FULL AFT STICK
- **7. AIRCRAFT SHOULD DEPART OPPOSITE APPLIED AILERON**
- **8. RECOVER USING OCF PROCEDURES**

The accelerated stall maneuver in Fams taught you that if you pull hard enough, you can stall the aircraft at any airspeed. In this maneuver, you are pulling close to the stall point and by introducing a rolling moment, you are effectively changing the relative AOA of each wing. The down going wing sees a lower AOA and is happy, but the up going wing sees a higher AOA and eventually stalls, causing you to roll opposite of your pull. Neutralizing the controls will immediately recover the aircraft, although you may have built up enough rolling moment to snap roll the aircraft once or twice.

1 v 0 Envelope Exploration

T45 Turn Performance 10k / 2k

C fuel



Corner A/S
410kts / 6.5G 15 deg/sec

Rate Band
300-330kts 10.5 deg/s (rate . 5deg/s higher at 240kts, but you sacrifice tactical options!!)

Min Radius
150kts 2000ft radius

(target

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1 V 0

- **1V0 maneuvers at discretion of IP, some examples are:**

- **45 deg nose low Break Turn demo / do (Stressing 10% rule to deck)**
- **Flat Scissors Demo**
- **.1-.2G Unload / extension to deck – started >15k**
- **Max Performance *Level* Break Turn on deck (bleed from 380-400kts to rate band #s)**

Conduct Recap

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- **Stall / Aero checklist**
- **70° nose high departure**
- **110° nose high departure**
- **Deep Stall Investigation**
- **Adverse Yaw Departure**
- **CONTR AUG ALL**
- **G-Warm**
- **Break Turns Demo/Do**
- **Flats Demo/Do (includes unload to 400kts and level break turn at 10.5k to rate numbers)**
- **RTB / Precautionary Approach**

Practice PA

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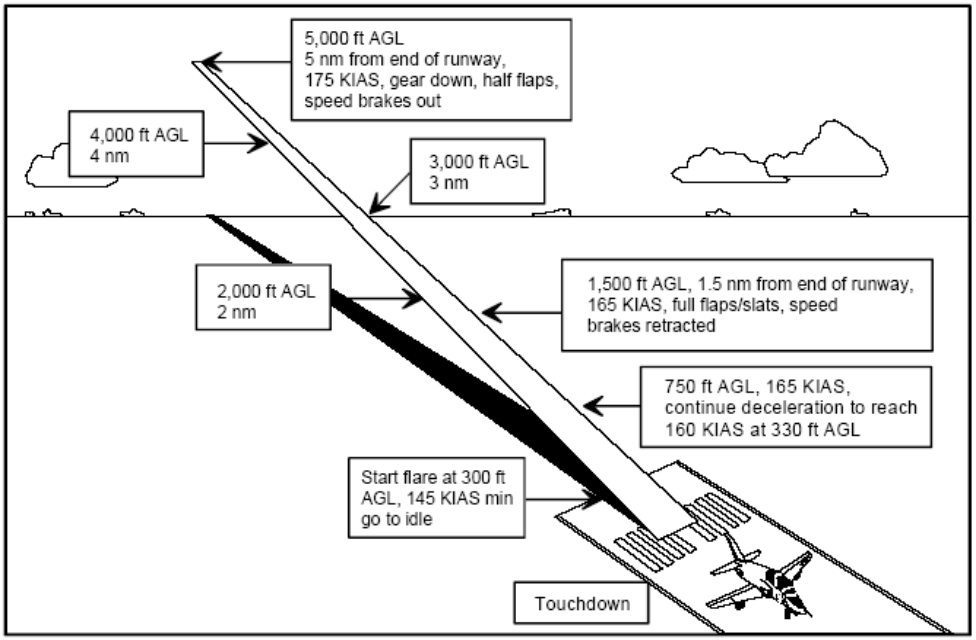
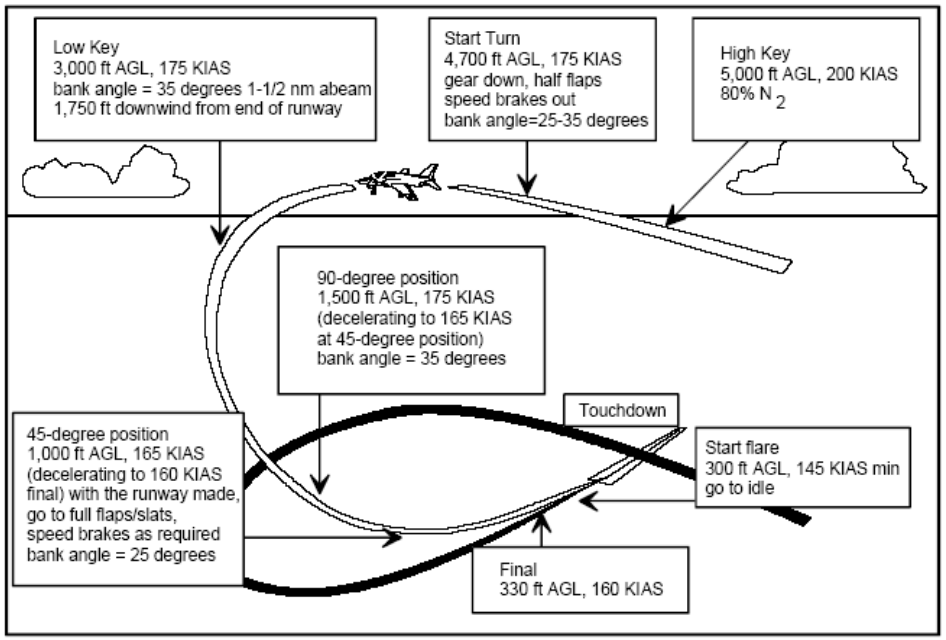
- **Complete in the area, check out and request a practice PA. Give yourself enough room from the runway to make a quality approach. Get in the landing pattern and work on some quality landings.**





Contingencies

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Emergencies

- Ground Emergencies
- Abort
- Runway Dep/Ground Ejection
- Radio/ICS failure
- Loss of Navaids
- Lost Plane
- System Failures
- Disorientation
- Bird strike/ Midair
- SAR procedures
- Ejection
- Aircrew Coordination
- TTO
- Read and Initial

Contingencies

- **Weather Requirements**
  - **ACM Weather minimums apply, except:**

    Cloud tops no higher than 5k.

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Recap

- **Overall Flow**
- **Questions**